TYLER N. KAMBIS#, and JORDAN A. MADER, Department of Chemistry,Shepherd University, Shepherdstown, WV, 25443. **Improving the synthesis and functionalization of polystyrene foams for removal of groundwater contaminants**.

Arsenic is one of the most abundant elements in the earth's crust and is a contaminant in the groundwater of many developing countries, as well as certain areas within the United States. Using polystyrene foams created by High Internal Phase Emulsion polymerization, arsenic can be removed from contaminated water in order to improve the drinkability in highly polluted areas. This research was centered on streamlining the reaction process required to functionalize the polystyrene with a thiol group that would bind to arsenic, as well as observing how different types of storage (wet versus dry) would affect the functionality of the polymer. Arsenic concentrations were lowered from 400 ppb to around 200 ppb with no noticeable trend in regards to how the polymer was stored. The second step of deprotection was able to be removed when functionalizing the polymer, as data suggested that it had little to no effect on how much arsenic bonded to the thiol functionalized foam.